Sony International (Europe) GmbH S00P5132EP00J PAE00-033TRDE

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### **Claims**

1. Device for generating, from incoming signal values  $(X_{i,n})$ , soft-values  $(Y_{i,n})$  to be input into a channel decoder (22) of a communication device for use in a wireless communication system, comprising:

- truncation means (24, 26, 28) for truncating said incoming signal values  $(X_{i,n})$  such as to fall within a predetermined limit value range, and

- normalization means (30, 32) for normalizing said truncated signal values ( $X_{i,n}^t$ ) such as to fit to an input range of said decoder (22),

#### characterized in

that said truncation means (24, 26, 28) are adapted to determine the boundaries of said limit value range in dependence on information representative of a signal-to-noise ratio of said incoming signal values  $(X_{i,n})$ , and in that said truncated signal values  $(X_{i,n})$ , after normalization, are output as said soft-values  $(Y_{i,n})$ .

2. Device according to claim 1,

### characterized in

that said truncation means (24, 26, 28) are adapted to calculate, from said incoming signal values  $(X_{i,n})$ , an absolute mean value (m) and to determine said boundaries of said limit value range based on said absolute mean value (m) multiplied by a scaling factor  $(\alpha)$ , said truncation means (24, 26, 28) being adapted to determine said scaling factor  $(\alpha)$  dependent on said information representative of said signal-to-noise ratio.

3. Device according to claim 2,

## characterized in

that said truncation means (24, 26, 28) are adapted to determine said scaling factor ( $\alpha$ ) such as to obtain a greater limit value range when said signal-to-noise ratio is low and to obtain a smaller limit value range when said signal-to-noise ratio is high.

- 4. Method for generating, from incoming signal values  $(X_{i,n})$ , soft-values  $(Y_{i,n})$  to be input into a channel decoder (22) of a communication device for use in a wireless communication system, comprising the steps of:
- truncating said incoming signal values  $(X_{i,n})$  such as to fall within a predetermined limit value range, and
- normalizing said truncated signal values  $(X_{i,n}^t)$  such as to fit to an input range of said decoder (22),

# characterized by

the step of determining the boundaries of said limit value range in dependence on information representative of a signal-to-noise ratio of said incoming signal values  $(X_{i,n}^t)$ , and outputting said truncated signal values  $(X_{i,n}^t)$ , after normalization, as said soft-values  $(Y_{i,n})$ .

## 5. Method according to claim 4,

### characterized by

the step of calculating, from said incoming signal values  $(X_{i,n})$ , an absolute mean value (m) and determining said boundaries of said limit value range based on said absolute mean value (m) multiplied by a scaling factor  $(\alpha)$ , said scaling factor  $(\alpha)$  being determined dependent on said information representative of said signal-to-noise ratio.

### 6. Method according to claim 5,

### characterized by

the step of determining said scaling factor ( $\alpha$ ) such as to obtain a greater limit value range when said signal-to-noise ratio is low and to obtain a smaller limit value range when said signal-to-noise ratio is high.